

SEQUENCE LISTING

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The Government of the United States of America
as represented by The Secretary of the
Department of Health and Human Services

<120> Alteration of RAB38 Function to Modulate Mammalian
Pigmentation

<130> 015280-148100PC

<140> WO PCT/US03/01622
<141> 2003-01-17

<150> US 60/349,929
<151> 2002-01-18

<160> 28

<170> PatentIn Ver. 2.1

<210> 1
<211> 8
<212> DNA
<213> Mus musculus

<220>
<223> Rab38 sequence of wildtype allele in C57Bl6/J +/+
DNA

<400> 1
ctgggtgt 8

<210> 2
<211> 8
<212> DNA
<213> Mus musculus

<220>
<223> Rab38 sequence of chocolate (cht) mutant allele in
c57Bl6/J Rab38cht/+ DNA

<400> 2
ctggktgt 8

<210> 3
<211> 34
<212> PRT
<213> Homo sapiens

<220>
<223> human RAB38 highly conserved N-terminal region

<400> 3
Met Gln Ala Pro His Lys Glu His Leu Tyr Lys Leu Leu Val Ile Gly
1 5 10 15

Asp Leu Gly Val Gly Lys Thr Ser Ile Ile Lys Arg Tyr Val His Gln
 20 25 30

Asn Phe

<210> 4
 <211> 34
 <212> PRT
 <213> Rattus norvegicus

<220>
 <223> rat RAB38 highly conserved N-terminal region

<400> 4
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 1 5 10 15

Asp Leu Gly Val Gly Lys Thr Ser Ile Ile Lys Arg Tyr Val His Gln
 20 25 30

Asn Phe

<210> 5
 <211> 34
 <212> PRT
 <213> Mus musculus

<220>
 <223> mouse RAB38 highly conserved N-terminal region

<400> 5
 Met Gln Thr Pro His Lys Glu His Leu Tyr Lys Leu Leu Val Ile Gly
 1 5 10 15

Asp Leu Gly Val Gly Lys Thr Ser Ile Ile Lys Arg Tyr Val His Gln
 20 25 30

Asn Phe

<210> 6
 <211> 47
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human RAB3a N-terminal region

<400> 6
 Met Ala Ser Ala Thr Asp Ser Arg Tyr Gly Gln Lys Glu Ser Ser Asp
 1 5 10 15

Gln Asn Phe Asp Tyr Met Phe Lys Ile Leu Ile Ile Gly Asn Ser Ser
 20 25 30

Val Gly Lys Thr Ser Phe Leu Phe Arg Tyr Ala Asp Asp Ser Phe
 35 40 45

<210> 7
 <211> 45
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human RAB5 N-terminal region

<400> 7
 Met Ala Ser Arg Gly Ala Thr Arg Pro Asn Gly Pro Asn Thr Gly Asn
 1 5 10 15
 Lys Ile Cys Gln Phe Lys Leu Val Leu Leu Gly Glu Ser Ala Val Gly
 20 25 30
 Lys Ser Ser Leu Val Leu Arg Phe Val Lys Gly Gln Phe
 35 40 45

<210> 8
 <211> 28
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human N-RAS N-terminal region

<400> 8
 Met Thr Glu Tyr Lys Leu Val Val Val Gly Ala Gly Gly Val Gly Lys
 1 5 10 15
 Ser Ala Leu Thr Ile Gln Leu Ile Gln Asn His Phe
 20 25

<210> 9
 <211> 1439
 <212> DNA
 <213> Homo sapiens

<220>
 <223> Rab38 cDNA

<400> 9
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 agctgctggt gatcggcgac ctgggtgtgg gcaagaccag cattatcaag cgctatgtgc 180
 accaaaactt ctctcgcac taccgggcca ccattggtgt ggacttcgcg ctgaagggtgc 240
 tccactggga cccagagacg gtggtgcgct tgcagctctg ggacattgct ggtcaagaaa 300
 gatttggaat catgacaaga gtttattacc gggaagctat gggggcattt attgtttttg 360
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 agttaacgct ccctaattgt aagccagtgt cagtgggtct gttggccaac aaatgtgacc 480
 aaggggaagga tgtgcttatg aacaatggac tcaagatgga ccagttctgc aaggagcatg 540
 gcttcgtagg atggtttgaa acatcagcca aggaaaacat aaacattgat gaagcctcaa 600
 gatgcctggt caagcacata cttgcaaagt agtgtgacct cctagagtct atagaaccgg 660
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 ttcagttttt ccttattacc attttgggta agcgtcagga tagggaagca catgtgacaa 840
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taaatcaaca	aaggcttctg	gtcttcttga	gaaggggaat	aacagagcaa	ggcagaggtc	1080
aagctaagtg	tggggatttg	tcttgccctg	gtgtgtcttt	gttcagggtat	caatttggtc	1140
ccgggtgggc	tgataggtct	attaaataga	aaccattcat	ggtagacctg	agggttgkct	1200
gtgatgtttc	tcttcagagt	cgtgtgcaca	ggcagcctgg	gcttttggtg	tcacttgctg	1260
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ttctttcagc	ttcctctgac	tcaagctgca	ggactcttct	gtatgtggaa	gatataattat	1380
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<210> 10

<211> 291

<212> DNA

<213> Homo sapiens

<220>

<223> Rab38 exon 1 and surrounding intron sequence

<400> 10

acatagagct	ccgggaaacg	tgggtgccca	gccccggctg	tgcttcccag	agcaagctcc	60
aggctccgca	agaccgcggg	gcctccagga	tgcagacacc	tcacaaggag	cacctgtaca	120
agctgctggt	gatcggcgac	ctgggtgtgg	gcaagaccag	cattatcaag	cgctatgtgc	180
accaaaactt	ctcctcgac	taccggggcca	ccattgggtg	ggacttcgcg	ctgaagggtgc	240
tccactggga	cccagagacg	gtggtgcgct	tgcagctctg	ggacattgct	g	291

<210> 11

<211> 282

<212> DNA

<213> Homo sapiens

<220>

<223> Rab38 exon 2

<400> 11

ggtcaagaaa	gatttgga	catgacaaga	gtttattacc	gggaagctat	gggggcattt	60
attgtttttg	atgtcaccag	accagccaca	tttgaagccg	tggcaaagt	gaaaaatgat	120
ttggactcaa	agttaacgct	ccctaattgg	aagccagtgt	cagtggttct	gttggccaac	180
aaatgtgacc	aagggaagga	tgtgcttatg	aacaatggac	tcaagatgga	ccagttctgc	240
aaggagcatg	gcttcgtagg	atggtttgaa	acatcagcca	ag		282

<210> 12

<211> 869

<212> DNA

<213> Homo sapiens

<220>

<223> Rab38 exon 3 and surrounding intron sequence

<400> 12

aggaaaacat	aaacattgat	gaagcctcaa	gatgcctggt	caagcacata	cttgcaaatg	60
agtgtgacct	cctagagtct	atagaaccgg	acattgtgaa	gccccatctc	acatcgccca	120
aggttgtcag	ctgctctggc	tgtgccaaat	cctagaaggc	tcctctgctg	gcataatgaca	180
gacagaaccc	gtggccctca	tgaatcgtgc	ttcagttttt	ccttattacc	attttgggta	240
agcgtcagga	tagggaagca	catgtgacaa	gccaaagata	catgactgta	tggttcctgt	300
caaagaggaa	cagcaaagt	tctttatgtg	ttttcccacc	ccatcagcac	agtgtttaca	360
agctttttaa	atattagtct	gtcacaatat	gctgttttat	cattgagcaa	agccactcag	420
ggacacagac	agccctaata	tttgttcctt	taaatcaaca	aaggcttctg	gtcttcttga	480
gaaggggaat	aacagagcaa	ggcagaggtc	aagctaagt	tggggatttg	tcttgccctg	540
gtgtgtcttt	gttcagggtat	caatttggtc	ccgggtgggc	tgataggtct	attaaataga	600
aaccattcat	ggtagacctg	agggttgkct	gtgatgtttc	tcttcagagt	cgtgtgcaca	660

ggcagcctgg gcttttgttg tcacttgctg tgccctgaat gctggtttaa ctgaaaactg 720
 tatggaaaga tctgctccct gtatgtgcct ttctttcagc ttcctctgac tcaagctgca 780
 ggactcttct gtatgtggaa gatattattat atatattttt cacaagtga aaataaaaaca 840
 ttaaaaatgc tgtttccctg tttctgata 869

<210> 13
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:TYRP15'T3F

<400> 13
 gcgcgaatta accctcacta aagggtctga gcacccctgt cttct 45

<210> 14
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:TYRP15'T7R

<400> 14
 gcgcgtaata cgactcacta tagggcccag ttgcaaaatt ccagt 45

<210> 15
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:MLSN R T7

<400> 15
 gcgggtaata cgactcacta taggggccac aaacatgtcc tacttac 47

<210> 16
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:MLSN FT3

<400> 16
 gcgcgaatta accctcacta aagggaagct tccggactct ctac 44

<210> 17
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex1F

 <400> 17
 taggaaggag gattaaaccc g 21

 <210> 18
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex 1R

 <400> 18
 gaactcctca tggctcactc c 21

 <210> 19
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex2F

 <400> 19
 ggatatgaag ctccagtgtgta gtgtac 26

 <210> 20
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex2R

 <400> 20
 cactggacag aaacattatt gtcac 25

 <210> 21
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex3F

 <400> 21
 aagttatcag ccagtgagat actgtg 26

<210> 22
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification primer Rab38 Ex3R

 <400> 22
 cacatgtggt atatctatcc tgacg 25

 <210> 23
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:amplification
 primer cht Ex1F

 <400> 23
 ggcctccagg atgcagacac c 21

 <210> 24
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:amplification
 primer cht Ex1R

 <400> 24
 ccagcaatgt cccagagctg c 21

 <210> 25
 <211> 49
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification att site linker primer AttB1-RRab

 <400> 25
 ggggacaagt ttgtacaaaa aagcaggctc catgcagaca cctcacaag 49

 <210> 26
 <211> 51
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:PCR
 amplification att site linker primer
 AttB2-RRab-STP

<400> 26
 ggggaccact ttgtacaaga aagctggggt ctaggatttg gcacagccag a 51

<210> 27
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 complementary to segment of RAB38 mRNA translation
 initiation codon

<400> 27
 aacgttgagg ggcac 15

<210> 28
 <211> 1412
 <212> DNA
 <213> Homo sapiens

<220>
 <223> human RAB38 DNA sequence

<400> 28
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 acaaggagca cctgtacaag ttgctgggtga ttggcgacct gggcgtgggg aagaccagta 120
 tcatcaagcg ctacgtgcac cagaacttct cctcgcaacta ccgggccaca atcggcgtgg 180
 acttcgcgct caaggtgctc cactgggacc cggagactgt ggtgcgcctg cagctctggg 240
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 gtgcatttat tgtcttcgat gtcaccaggc cagccacatt tgaagcagtg gcaaagtgga 360
 aaaatgattt ggactccaag ttaagtctcc ctaatggcaa accggtttca gtgggtttgt 420
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